

PROPOSAL

for an

INTERNATIONAL DISASTER CENTER

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Several serious natural disasters, especially the Peruvian earthquake and the East Pakistan flood disaster in 1971 and recently the cholera epidemic among refugees from East Pakistan, have triggered worldwide relief action. In each of these emergencies, however, international aid did not achieve the effect that it could have with the resources that are available.

After 2 years of experience in relief work in Vietnam, I took part with a German medical team in relief missions for both the Peruvian and East Pakistan disasters, in a relief mission for

East Pakistan refugees in India, and in the preparations of aid programs for Bangladesh, facing personally the problems of delivering effective international disaster assistance. Based on these experiences, I suggest a different mechanism for study, planning, and relief of disasters.

My discussion of natural disasters and the major problems of international disaster relief, showing how international relief problems can be solved and how international aid can be organized most effectively through an international disaster center (I.D.C.), outlines the structure, responsibilities, and activities of such a center.

Natural Disasters of the Past

Serious natural disasters have occurred throughout history. Those of past centuries, excluding epidemics and famines, are listed in table 1 (1-8). During the past century alone, some 9 million people died in floods, 900,000 in earthquakes, and more than 600,000 in hurricanes, typhoons, and cyclones (9).

The 20th century has registered 26 natural disasters, each with 10,000 or more victims (1,2,5,6,8,10-12,17,18), as shown in table 2. Each of more than 30 earthquakes has claimed the lives of at least 1,000 people. Floods, cyclones, and other natural forces also claim the lives of hundreds and thousands of people in different parts of the world every year. Victims of natural disasters in this century already number several million.

Losses in these disasters included not only human life but also extensive damage to property, although there was not always a connection between the damage and the number of victims. The 1906 San Francisco earthquake, for example, in which 600 people died, caused the same amount of damage to property (\$524 million) as the 1971 earthquake in Peru, which caused 70,000 deaths. In the 1964 Alaskan earthquake, damage was estimated at \$500 million, with 137 victims. In 1966 alone, 58 disasters, predominantly in developing countries, reportedly cost about \$3.4 billion (9).

Certain areas of the world are particularly exposed to minor or major disasters for geologic and geographic reasons. The potential earthquake disaster zones are Central and Southeast Asia including Japan, the entire West Coast of the American Continent, and the Mediterranean Region, as well

as Asia Minor (13). These areas also include more than 500 volcanoes, which are still active today and whose eruptions in some instances also have led to serious disasters.

Tropical storms, too, cause serious disasters in specific areas: typhoons are predominant in the Philippines, Formosa, Japan, and in the coastal regions of China and Indochina; cyclones occur primarily in the Bay of Bengal; and hurricanes strike mainly the West Indies and the coastal areas of North and Central America (14).

Flood disasters occur in almost every country of the world. Generally, they are a serious threat to human life only in the densely populated plains of large rivers.

Problems of International Relief

The most serious natural disasters in past years have struck the developing countries of the world or those regions with a weak infrastructure. The experiences from these disasters have always been similar (15-19), and the local authorities usually were not able to manage the situation on their own. Most important was the fact that an expert group was never available immediately after the disaster to efficiently coordinate and organize all relief efforts. Each organization and the various governments sending aid always acted more or less independently of one another, often influenced by institutional ambition or political motives.

A main problem, as far as the developing countries were concerned, was the unavailability of transportation facilities. In Peru and in East Pakistan, for example, no efficient system for distributing relief goods could be organized because of the lack of transportation. Weeks passed before relief, often urgently needed, penetrated to the outlying districts of the disaster area.

Both the Peruvian and Pakistani disasters and again the recent situation of the East Pakistani refugees also proved that most countries and organizations had not sufficiently planned for advance relief to foreign countries. Almost every technically developed country has a national disaster plan, but only a few have an exact plan of how to act in the event of a disaster in another country and of what kind of assistance would be best for disaster-struck developing countries.

Nonexistent preplanning and the lack of clear information about necessary aid generally lead to the late arrival of international relief and sometimes to unnecessary aid. Additional problems are

Table 1. Major natural disasters in past centuries

Year and reference No.	Kind of disaster	Place	Deaths
79 (2)	Eruption....	Mt. Vesuvius, Italy..	60,000
586 (2)	Earthquake..	Corinth, Greece....	45,000
1268 (3)	Earthquake..	Cilicia, Asia Minor..	60,000
1290 (2,3)	Earthquake..	China.....	100,000
1556 (1-3)	Earthquake..	China.....	830,000
1662 (4)	Earthquake..	China.....	300,000
1667 (2)	Earthquake..	Caucasia.....	80,000
1669 (5)	Eruption....	Etna, Sicily.....	100,000
1693 (6)	Earthquake..	Italy.....	60,000
1703 (6)	Earthquake..	Tokyo, Japan.....	137,000
1727 (3)	Earthquake..	Iran.....	77,000
1730 (3,4)	Earthquake..	China.....	100,000
1737 (1-3)	Cyclone....	Calcutta, India....	300,000
1755 (2,3)	Earthquake..	Lisbon, Portugal....	60,000
1797 (2)	Earthquake..	Ecuador, Peru, and Chile.	41,000
1850 (3)	Earthquake..	China.....	300,000
1868 (2,3)	Earthquake..	Ecuador and Columbia.	70,000
1876 (1)	Cyclone....	East Pakistan.....	300,000
1881 (1)	Typhoon....	Haiphong, Vietnam.	300,000
1882 (8)	Cyclone....	Bombay, India.....	100,000
1883 (2,7)	Eruption....	Krakatoa, Java....	36,500
1887 (2,3)	Flood.....	Hoangho, China....	900,000
1896 (8)	Typhoon....	Japan.....	27,000

Table 2. Most serious natural disasters of 20th century

Year and reference No.	Kind of disaster	Place	Deaths
1902 (2,10)	Eruption....	Mt. Pelee, West Indies.	40,000
1908 (2,6)	Earthquake..	Messina, Italy.....	80,000
1911 (8)	Flood.....	Yangtze Kiang, China.	100,000
1920 (2,5)	Earthquake..	Kansu, China.....	180,000
1923 (11)	Earthquake..	Tokyo, Japan.....	143,000
1927 (8)	Earthquake..	Nanha, China.....	200,000
1931 (12)	Flood.....	Hoangho, China....	1,000,000
1932 (1)	Earthquake..	Kansu, China.....	70,000
1935 (2)	Cyclone.....	India and Pakistan..	60,000
1939 (2)	Earthquake..	Chile.....	40,000
1939 (8)	Typhoon....	Trentin, China.....	200,000
1939 (1)	Earthquake..	Turkey.....	33,000
1942 (8)	Flood.....	India and Pakistan..	10,000
1949 (8)	Flood.....	Guatemala.....	40,000
1950 (2)	Earthquake..	Assam, India.....	26,000
1959 (8)	Flood.....	China.....	2,000,000
1960 (2)	Earthquake..	Chile.....	10,000
1960 (2)	Earthquake..	Agadir, Morocco...	12,000
1960 (18)	Cyclone.....	East Pakistan.....	15,000
1961 (18)	Cyclone.....	East Pakistan.....	12,000
1962 (2)	Earthquake..	Iran.....	10,000
1963 (18)	Cyclone.....	East Pakistan.....	12,000
1965 (18)	Cyclone.....	East Pakistan.....	20,000
1966 (18)	Cyclone.....	East Pakistan.....	15,000
1968 (1)	Earthquake..	Iran.....	12,000
1970 (17)	Earthquake..	Peru.....	70,000
1970 (18)	Cyclone.....	East Pakistan.....	206,000

created by concentrating all relief efforts in the first weeks and only for a short period. Long-term relief, coordinated with development aid, would often be of greater value to these countries.

The efficiency of assistance during foreign disasters depends on the immediate reaction of the local and national institutions of the disaster-struck country. Every government and organization that wishes to help must wait at least until it is invited to do so. Immediate realization by local and national authorities that they are not able to manage the disaster situation alone, especially in developing countries, is one of the greatest problems. Constant standby of an international team of experts for immediate action in the event of a disaster could provide the needed assistance. Such a team of experts could also be the solution to many other problems of international aid after disaster.

The two organizations most suitable for appointing an international team of disaster experts, of all existing organizations, would be the League of Red Cross Societies and the United Nations organization. Both are already directly or indirectly involved in disaster assistance (9,20-22). Because of their size and many diverse activities,

however, the League of Red Cross Societies and the United Nations organization work too slowly and are burdened with too many other problems. The League of Red Cross Societies, moreover, has had difficulties in directing its relief programs during previous disasters.

The entire structure of the International Red Cross is so closely attached to each national society that the organization is unable to function with the independence and speed that are necessary. After the East Pakistani disaster, for example, the representative of the League of Red Cross Societies who was to assess the situation, did not arrive in East Pakistan until 3 days after the disaster had occurred, which proved to be too late to make a decision about emergency assistance. Further, when the Red Cross did put international relief into operation, its representatives, meeting continuously in Dacca's International Hotel, could not solve the main problems in the disaster area.

A main objection to the coordination of international relief through the League of Red Cross Societies seems to be that neither church institutions nor other relief organizations would readily place their aid under the control of the Red Cross. The various governments, too, since they prefer to provide direct rather than indirect aid, certainly would not agree to such a solution.

Attachment of a team of experts to the U.N. organization would be much better. As representatives of the U.N., the experts would not only have the necessary authority for coordinating relief from governments but they most certainly would be accepted by church institutions and other organizations.

On the other hand, the U.N. is primarily a political organization, where even nonpolitical matters often become political. Problems could start, for example, with the appointment of the experts, if many countries wanted to be represented in this group.

The attachment of experts to the U.N. seems not to be ideal, moreover, if all countries are not represented. Each plan for international disaster relief should incorporate all countries into its scope of duties.

The most suitable solution is to create an independent international disaster center that is recognized and supported by both the United Nations and the International Red Cross, as well as by other international bodies, governments,

and organizations. In the event that other countries become members of the United Nations, it might be possible to attach a center to the United Nations—just as the U.N. High Commission for Refugees is attached—as a temporary organization with some independence for immediate assistance. An institution like an international disaster center, concerned only with disaster assistance, could most effectively meet disaster requirements—since not all countries have their own disaster office and official disaster plan.

Organizing the Center

Staff. Experts for the international disaster center could on occasion be detached on a voluntary basis, through a kind of leasing system, from the different international organizations involved in disaster relief or disaster control, such as the International Red Cross, World Health Organization, Food and Agricultural Organization, World Meteorological Organization, and others, including church institutions.

The necessary budget for financing the current

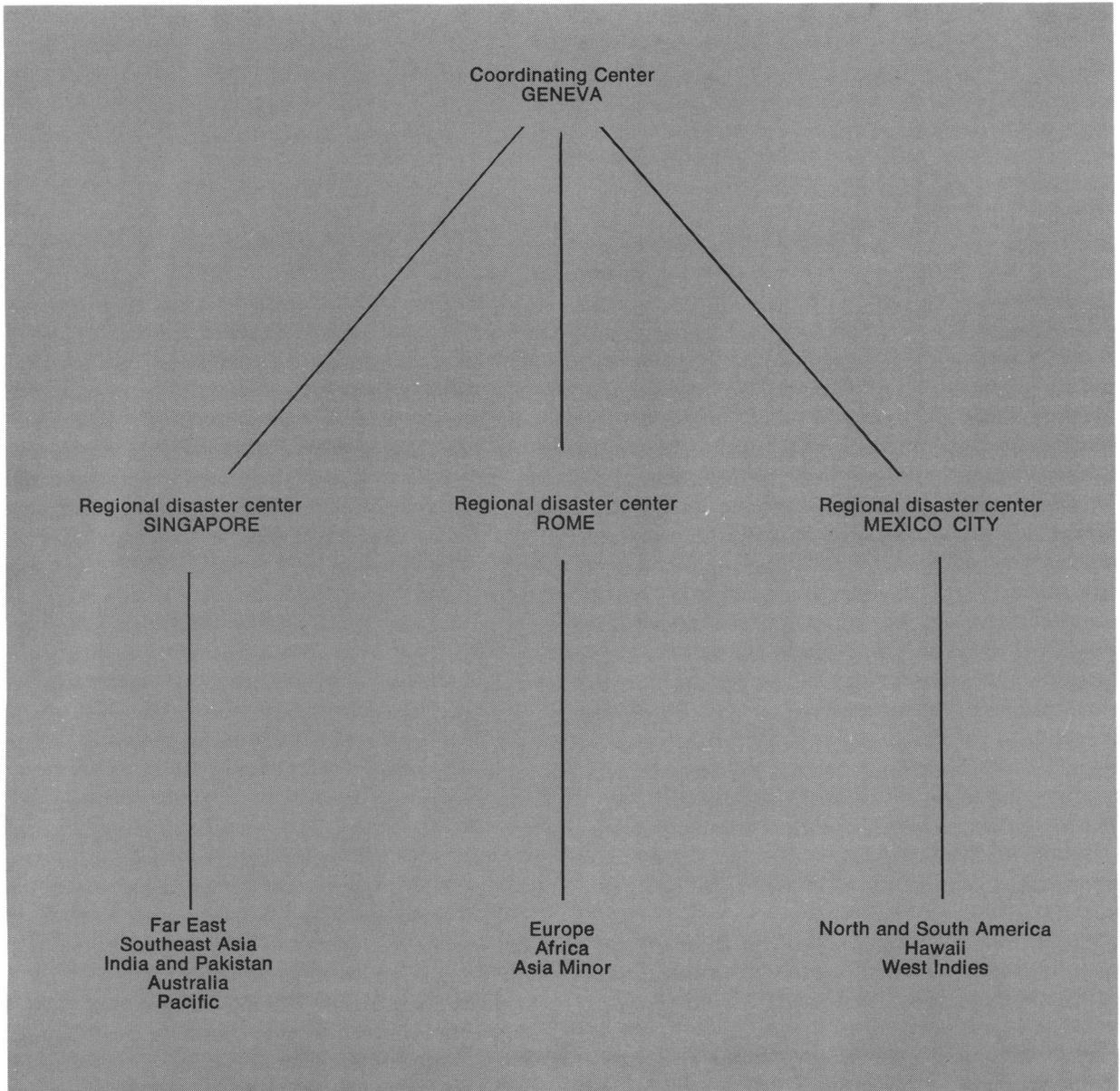


Figure 1. International disaster center, central and regional offices

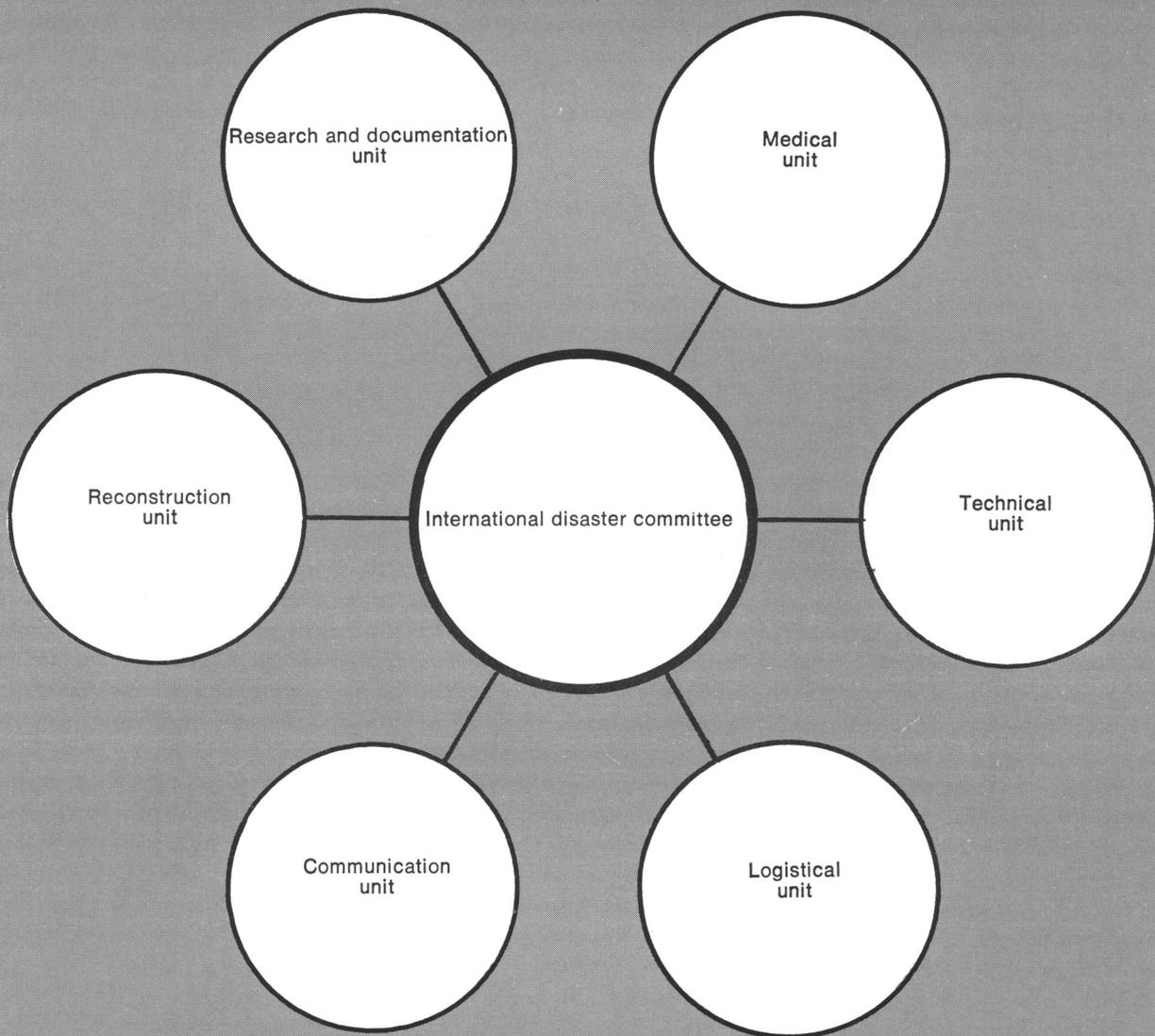


Figure 2. Structure of the coordinating center

costs of such a center could be supplied from the emergency funds of these international organizations, including the \$150,000 that the U.N. Secretary General has at his disposal for disaster relief. With support only from international organizations, the disaster center would always be independent of political or other influence.

Location. Since many international organizations are headquartered in Geneva, this city

would be a suitable location for an international disaster center in coordinating and relating to other organizations and institutions involved in disaster relief. The experiences of other international organizations, however, have shown the need and advantages of additional regional offices. Regional disaster centers could be situated centrally in the areas where most disasters occur. For example, they could be established in Singapore,

Rome, and Mexico City. All three cities are not only near a potential disaster area, but they also have the communication facilities needed for immediate activity. The areas for which these regional disaster centers could be responsible are shown in figure 1.

Tasks and responsibilities. Functions of the international disaster center and its experts would be to advise, coordinate, and organize with the national institutions all national and international aid. As in the past, relief would be given only according to the wishes of the donating countries or organizations and as required by the government of the disaster-struck country.

Coordination of efforts. The disaster relief center would be responsible for coordinating all national and international relief efforts. Most important would be a filing system showing where and how quickly transportation, teams of specialists, and relief supplies could be provided in the event of a disaster. With such a filing system, the establishment of supply depots would not be necessary. This coordinating office also should assist the nations that usually offer disaster assistance in preparing the most effective aid, especially by providing better coordination of efforts in supplying emergency aid and long-term development aid.

A possible structure for the coordinating center is given in figure 2. Corresponding to the most important duties in disasters, a number of units (technical, medical, communications, logistical, reconstruction, and research and documentation) could be formed. Each unit could consist of three or four experts in a specialized field, under a director of that unit, and the directors would represent the international disaster committee. The responsibilities of the units would be as follows:

MEDICAL UNIT: Emergency care of the seriously injured and provision of reasonable medical care to people in the disaster area. Vaccinations and control of sanitary conditions to prevent outbreaks of epidemics. The establishment of medical and public health relief teams in advanced countries on constant standby for foreign missions. Members of these relief teams should have, besides their special functions, a knowledge of languages and parachutist training. For each position within such teams, several persons should be available so that one specialist would always be ready in the event of a disaster.

TECHNICAL UNIT: Organizing immediate rescue operations of survivors; clearing roads and other

transportation lines; providing basic living facilities such as emergency housing, water supply, and energy; and forming special technical relief teams that correspond to those of the medical unit.

LOGISTICAL UNIT: Calculation of the vital relief necessary per capita and per unit of territory for the different countries and for the different types of disasters. Organization of the required transportation facilities. Arrangement of immediate transportation, such as aircraft and helicopters, for the experts of the regional centers in the event of a disaster.

COMMUNICATIONS UNIT: Establishment of direct radio links between the coordinating center in Geneva and the regional offices, between the regional centers and the different national disaster committees, and to all disaster control and warning centers of the region in order to receive immediate information of the danger or the occurrence of a disaster. Establishment of an immediate network of radio links in a disaster area.

RECONSTRUCTION UNIT: Elaboration of reconstruction plans for the damaged area in consideration of the latest technological findings for preventing disasters. Obtaining the necessary financial resources for a reconstruction program. Installation of disaster warning systems with cooperation of the communications unit.

RESEARCH AND DOCUMENTATION UNIT: Complete documentation of the occurring disasters and, as far as possible, a re-analysis of past disasters to determine special features and problems in certain areas. Collection of precise records from each country, including all data and specific information necessary for the relief of disasters.

Regional offices. In the regional offices, two experts each in the medical, technical, logistical, and communications fields would be sufficient. In the event of a disaster, some of these experts (one from each unit) would fly immediately to the disaster area to make an on-the-spot assessment and to prepare the first official report on the situation and the relief required. After the assessment, the experts could give first-hand assistance to the less experienced national authorities in organizing relief.

Besides direct assistance, the main task of the regional centers experts would be to work out disaster plans for each country, together with its government, should such plans not already exist in that country. These plans would include the training of experts in national disasters and the formation of national disaster units of different

types. If the financial resources of a country did not permit such work, the international disaster center could try to arrange financial support for this purpose.

National Counterparts

Each country would have to nominate representatives to cooperate with the regional disaster center. These counterparts might belong to an already existing national office. In the countries where no disaster office and no disaster plans are yet available, the nominative representatives would have to begin, assisted by the international disaster center experts, to set up their own disaster plans and units and, as far as possible, disaster warning systems.

Activities After a Disaster

Each disaster would immediately become known to a regional disaster center by direct link with all control and warning centers of the region. Those experts permanently prepared for action could then leave immediately for the site by their own means of transport. Within 24 hours after the disaster has happened, a first official report on the situation, including advice for necessary assistance, could reach all governments and relief organizations via the regional disaster center and the central coordination office in Geneva.

After the first assessment of the situation, the international disaster center experts would begin to organize national relief and emergency measures with national officials. The first objective would be the establishment of a central disaster office, with different units corresponding to the international disaster center, through which all relief would be channeled. Depending on the extent of the disaster, and corresponding to the recommendations of the first report, more experts would be sent from Geneva. They could take over the task of establishing the central disaster office, while the experts who were first to arrive returned to the disaster area to supervise the relief.

In this way, for each disaster a central office with a committee experienced in disasters would be in action within 48 hours. On this disaster committee, one I.D.C. expert would work full time with a national representative, usually the I.D.C. counterpart. Should there be too few experts with the regional disaster center—as might happen during a disaster comparable to those in Peru and East Pakistan—further experts could be called from other regional centers.

With adequate preparation, the first foreign relief would arrive at the disaster site during the first 24 to 48 hours, especially the transport facilities and teams requested in the first report of the experts. Means of transport, such as helicopters—if they did not come from the immediate neighboring countries—would have to be reassembled after arrival. They would therefore not be ready for action until approximately 72 hours after the disaster. For assistance during the primary emergency period, it would be most important to airdrop relief goods and relief teams.

Once the central disaster office had been set up, relief action could take place in the following way. Experts remaining in the disaster area, as well as those in the local disaster offices that had been established, could transmit reports by radio on the situation and requests for help to the equivalent unit in the central disaster office. From there the staff could determine whether the necessary aid was available, whether it could be found in the relief that had already arrived, or whether it could come from national resources. Should the necessary relief not be available on the spot, an attempt could be made via the I.D.C. coordinating office to support the requested aid as soon as possible from any Government or organization.

It would be most important that all incoming relief—with or without a specified destination—pass through the central disaster office. Only in this way could the general picture be maintained and systematic planning be formulated. It would be advantageous to set up the central disaster office at the exact point where the relief arrives, since a checkpoint could be guaranteed for the necessary control of all relief.

Conclusion

The creation of an international disaster center is suggested as a feasible solution for the current dilemma in international disaster relief. Most developing countries will not be in a position to prepare effective disaster plans and their own disaster units in the near future. An international disaster center therefore could give vital help to these countries in the event of a disaster as well as in preparing national disaster plans.

For economic reasons, too, the availability of an international disaster center would be advantageous. Nearly every serious disaster in recent years has led to much unnecessary provision of relief, and to a certain waste of money and efforts. By means of better planning and the co-

ordination of relief through an international disaster center, a substantially greater effect could be achieved with far fewer resources. In addition, the availability of an international disaster center would guarantee for the many contributors throughout the world that their donations were not made in vain and that they were sent to the point where they were actually needed.

The role of the international disaster center during armed conflicts, especially in civil disturbances and wars, cannot be fully considered in this paper. Many problems that are peculiar to such situations would require long and thorough study. In any other emergency situation, however, as for instance the recent cholera epidemic among the East Pakistan refugees, the international disaster center could give vital assistance.

Another problem is the employment of foreign armed forces during disasters. The armed forces without doubt have at their disposal the best specialized teams, ready for action, as well as the necessary means of transport. On the other hand, no nation—especially among the neutral countries—is favorably disposed toward the sight of foreign soldiers on its territory. In East Pakistan, for example, the use of foreign troops led to some opposition. But currently there is no alternative to calling in military transport during most disasters. A mobilization of U.N. units would be more suitable, but as their dispatch depends on decisions of the U.N. Assembly, it would usually take too long. The best solution therefore seems to be the employment of civilian relief teams within the framework of bilateral disaster relief through individual governments.

Many specific problems of disaster relief, as for instance the question of immediate entry of the experts into a country in the event of disaster without undergoing the usual formalities—which often means a loss of several hours—would have to be clarified with the respective countries through the international disaster center. To discuss all the details of disaster relief would be beyond the scope of this paper.

The final aim of all endeavors, including those of an international disaster center, must represent the establishment of national disaster plans and units in every country. As the East Pakistan example has shown, the most serious disasters can result from human failures or technical mistakes despite exact preventive measures. Moreover, the population explosion in the coming decades and the increasing concentration of population in

geographically confined areas continually increases the probability of disasters on a mass scale. Technological progress also causes a continually growing danger of disasters resulting from technical science. Finding methods and ways of averting disasters must therefore stand in the forefront of all endeavors.

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